

CLAIMS

1. A trailer train apparatus comprising:
 - a) a train that includes plurality of trailers, each having a chassis and plurality of wheels attached to the chassis with front and rear steerable supports, the trailers being connected end-to-end at trailer connection pivots;
 - b) each support being attached to its chassis at axle pivotal connections, each support having respective left and right side portions that are on opposite sides of the pivotal connection;
 - c) a plurality of links that attach to the trailers including a first link that attaches to the left side of an axle of a first trailer and to the right side of an axle of an adjacent, second trailer and a second link that attaches to the left side of an axle of a third trailer and to the right side of an axle of the second trailer; and
 - d) two of said plurality of trailers at opposing ends of said connected plurality having trailer tongues that enable the train to be towed by pulling either one of the tongues.
2. The trailer train apparatus of claim 1 wherein the links include a plurality of pushrods.
3. The trailer train apparatus of claim 1 wherein the chassis has a periphery and both supports extend beyond the periphery.
4. The trailer train apparatus of claim 1 wherein each tongue is connected to a support.
5. The trailer train apparatus of claim 1 further comprising a beam that defines the support and carries each wheel on a spindle.
6. The trailer train apparatus of claim 5, wherein the beam is pivotally connected to the chassis.
7. The trailer train apparatus of claim 1, wherein each chassis has a generally rectangular periphery.
8. The trailer train apparatus of claim 1, wherein

each chassis has front and rear edge portions and left and right side portions, wherein said edge and side portions defining the chassis periphery.

9. The trailer train apparatus of claim 8, wherein
5 at least one support is mounted within the periphery.

10. The trailer train apparatus of claim 8, wherein both axles are mounted within the periphery.

11. The trailer train apparatus of claim 1 further comprising a carriage that is attached to a pair of wheeled
10 carriages in between said pair of wheeled carriages.

12. A trailer train apparatus comprising:

a) a train that includes plurality of trailers, each having a chassis and at least some trailers having a plurality of wheels attached to the trailer chassis with
15 front and rear steerable wheel supports, the trailers being connected end-to-end at trailer pivotal connections;

b) each wheel support is attached to its chassis at one of said pivotal connections, each wheel support having respective left and right side portions that extend to
20 opposite sides of a said pivotal connection;

c) a plurality of links that connect between the wheel supports, each link being configured to rotate adjacent wheel supports in opposite rotational directions;

d) two of said plurality of trailers at opposing
25 ends of said connected plurality having trailer tongues that enable the train to be towed by either of the tongues.

13. The trailer train apparatus of claim 12 wherein the chassis has a periphery and at least one wheel is positioned to extend beyond the periphery.

30 14. The trailer train apparatus of claim 12 wherein the chassis has a periphery and both wheels extend beyond the periphery.

15. The trailer train apparatus of claim 12 wherein each tongue is connected to an axle.

35 16. The trailer train apparatus of claim 12 further

comprising a beam that carries each axle.

17. The trailer train apparatus of claim 12, wherein the beam is pivotally connected to the chassis.

18. The trailer train apparatus of claim 12, wherein
5 each chassis has a generally rectangular periphery.

19. The trailer train apparatus of claim 12, wherein each chassis has front and rear edge portions and left and right side portions, wherein said edge and side portions defining the chassis periphery.

20. The trailer train apparatus of claim 12, wherein
10 at least one axle is mounted within the periphery.

21. The trailer train apparatus of claim 12, wherein both axles are mounted within the periphery.

22. The trailer train apparatus of claim 12, further
15 comprising a carriage that is attached to a pair of wheeled carriages in between said pair of wheeled carriages.

23. The trailer train apparatus of claim 1 wherein at least one of the trailers is a wheelless trailer.

24. The trailer train apparatus of claim 12 wherein
20 at least one of the trailers is a wheelless trailer.

25. The trailer train apparatus of claim 1 wherein the trailer connection pivots that connect trailers together are in line with the axle pivotal connections.

26. The trailer train apparatus of claim 12 wherein
25 the trailer connection pivots that connect trailers together are in line with the axle pivotal connections.

27. A trailer train apparatus comprising:

a) a train that includes plurality of trailers, each trailer having a chassis, some of the chassis having front
30 and rear pairs of steerable wheels, some of the chassis having no wheels, the trailers being connected end-to-end at trailer connection pivots;

b) a plurality of links connect from one trailer to another, said links of at least one chassis steering one
35 pair of wheels to rotate in one rotational direction when

the other pair of wheels is steered to an opposite rotational direction; and

c) said plurality of trailers having a trailer tongue at each end that enables the train to be towed.

5 28. The trailer train apparatus of claim 27 wherein the chassis has a periphery and at least one axle extends beyond the periphery.

29. The trailer train apparatus of claim 27 wherein the chassis has a periphery and both axles extend beyond the
10 periphery.

30. The trailer train apparatus of claim 27 wherein the tongue is connected to an axle.

31. The trailer train apparatus of claim 27 wherein at least one of the axles is a beam and spindles are
15 supported by the beam, each spindle rotatably supporting one of said wheels.

32. The trailer train apparatus of claim 31 wherein the beam is pivotally connected to the chassis.

33. The trailer train apparatus of claim 27, wherein
20 each chassis has a generally rectangular periphery.

34. The trailer train apparatus of claim 27, wherein each chassis has front and rear edge portions and left and right side portions, wherein said edge and side portions defining the chassis periphery.

25 35. The trailer train apparatus of claim 34, wherein at least one axle is mounted within the periphery.

36. The trailer train apparatus of claim 34, wherein both axles are mounted within the periphery.

37. The trailer train apparatus of claim 27 further
30 comprising a carriage that is attached to a pair of wheeled carriages at a position in between said pair of wheeled carriages.

38. A trailer train apparatus comprising:

a) a train that includes plurality of trailers, each
35 having a chassis and at least some trailers having front

and rear steerable wheeled axles, at least one trailer having no wheels, the trailers being connected end-to-end at trailer connection pivots;

5 b) each axle support is attached to its chassis at one of the trailer pivots, each axle support having respective left and right side portions that are on opposite sides of a pivotal connection;

10 c) linkage that joins each axle support to another axle support in a manner that steers other of the axle supports when one of the axle supports is steered; and

 d) at least one of said plurality of trailers of said connected plurality having a trailer tongue that is connected to an axle support, enabling the train to be towed and one of the axle supports to be steered.

15 39. The trailer train apparatus of claim 38 wherein the chassis has a periphery and at least one wheel is positioned to extend beyond the periphery.

20 40. The trailer train apparatus of claim 38 wherein the chassis has a periphery and both wheels extend beyond the periphery.

 41. The trailer train apparatus of claim 38 wherein each tongue is connected to an axle support.

 42. The trailer train apparatus of claim 38 further comprising a beam that is part of an axle support.

25 43. The trailer train apparatus of claim 38, wherein the beam is pivotally connected to the chassis.

 44. The trailer train apparatus of claim 38, wherein each chassis has a generally rectangular periphery.

30 45. The trailer train apparatus of claim 38, wherein each chassis has front and rear edge portions and left and right side portions, wherein said edge and side portions defining the chassis periphery.

 46. The trailer train apparatus of claim 38, wherein at least one axle support is mounted within the periphery.

35 47. The trailer train apparatus of claim 38, wherein

a plurality of the axle supports are mounted within the periphery.

48. The trailer train apparatus of claim 38 further comprising a carriage that is attached to a pair of wheeled
5 carriages in between said pair of wheeled carriages.

49. The trailer train apparatus of claim 27 wherein at least one of the trailers is a wheelless trailer.

50. The trailer train apparatus of claim 38 wherein at least one of the trailers is a wheelless trailer.

10 51. The trailer train apparatus of claim 27 wherein the trailer connection pivots that connect trailers together are in line with the axle pivotal connections.

52. The trailer train apparatus of claim 38 wherein the trailer connection pivots that connect trailers together
15 are in line with the axle pivotal connections.